II.   CLAIMS

1.   (Original) A method for encoding video information, comprising the following steps of:

- estimating the motion of picture elements between a piece of reference video information and a piece of current video information,

- modeling the motion of picture elements using a certain set of basis functions and certain motion coefficients,

- defining a certain set of quantizers,

- selecting, based on a certain predetermined selection criterion, a motion coefficient quantizer from the set of quantizers, and

- quantizing the motion coefficients using the selected motion coefficient quantizer.

2.   (Original) A method for encoding video information according to claim 1, wherein the selection criterion is the value of a certain parameter used in the encoding.

3.   (Original) A method for encoding video information according to claim 2, further comprising the following steps of:

- defining a set of inverse quantizers,

- determining a selected motion coefficient quantizer using which the motion coefficients are quantized,

- performing inverse quantization of the quantized motion coefficients using an inverse quantizer corresponding to the selected motion coefficient quantizer,

- determining the motion of the picture elements using the inverse quantized motion coefficients and the basis functions,

- determining a piece of prediction video information using the piece of reference video information and the determined motion of the picture elements,

- determining a piece of prediction error video information based on the difference of the piece of prediction video information and the piece of current video information,

- coding the piece of prediction error video information and representing it with certain prediction error coefficients,

- quantizing the prediction error coefficients using a prediction error quantizer, and

- selecting the motion coefficient quantizer based on the prediction error quantizer.

4.   (Original) A method for encoding video information according to claim 3, wherein the quantization interval of the motion coefficient quantizer is related to the quantization interval of the prediction error quantizer.

5.   (Original) A method for encoding video information according to claim 1, wherein the predetermined selection criterion is the target image quality.

6.   (Original) A method for encoding video information according to claim 1, wherein the predetermined selection criterion is the amount of information needed to represent the quantized coefficients.

7.   (Original) A method for encoding video information according to claim 1, wherein the motion of picture elements is modeled using a set of orthogonal basis functions.

8.   (Original) A method for encoding video information according to claim 7, wherein the motion of picture elements is modeled using a set of affine orthogonal basis functions.

9.   (Original) A method for encoding video information according to claim 7, wherein the motion of a picture element is represented by predicting the motion of the picture element based on the motion of certain neighboring picture elements and by determining a refinement motion for the picture element.

10.   (Original) A method for encoding video information according to claim 9, wherein the refinement motion is modeled using a set of affine orthogonal basis functions.

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11.   (Original) A method for encoding video information according to claim 1, further comprising a step of transmitting the quantized motion coefficients to a receiver.

12.   (Original) A method for encoding video information according to claim 11, further comprising a step of transmitting information specifying the selected motion coefficient quantizer to the receiver.

13. (Original) A method for encoding video information according to claim 1, wherein the set of quantizers comprises a number of uniform quantizers each having a different quantization interval.

14.   (Original) A method for encoding video information according to claim 1, wherein the set of quantizers comprises a number of modified uniform quantizers, each having a different quantization interval.

15.   (Original) A method for decoding encoded video information, comprising the following steps of:

- receiving quantized motion coefficients describing motion of picture elements,

- defining a set of inverse quantizers,

- determining a selected motion coefficient quantizer using which the motion coefficients are quantized,

- performing inverse quantization of the quantized motion coefficients using an inverse quantizer corresponding to the selected motion coefficient quantizer,

- determining the motion of the picture elements using the inverse quantized motion coefficients and certain basis functions, and

- determining a piece of prediction video information using a piece of reference video information and the determined motion of the picture elements.

16.   (Original) A method for decoding encoded video information according to claim 15, further comprising a step of determining the basis functions using which the motion of the picture elements is modeled.

17.   (Original) A method for decoding encoded video information according to claim 15, wherein the selected motion coefficient quantizer is determined from transmitted information relating to a certain parameter used in the encoding.

18.   (Original) A method for decoding encoded video information according to claim 16, wherein the received encoded video information comprises quantized prediction error coefficients describing a piece of prediction error video information, further comprising the following steps of:

- determining a prediction error quantizer using which the prediction error coefficients are quantized,

- performing inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer,

- determining a decoded piece of prediction error video information using the inverse quantized prediction error coefficients, and

- determining a decoded piece of current video information using the piece of prediction video information, wherein the selected inverse motion coefficient quantizer is determined based on the prediction error quantizer.

19.   (Original) A method for decoding encoded video information according to claim 15, wherein the encoded video information comprises information indicating the selected motion coefficient quantizer.

20.   (Original) A method for decoding encoded video information according to claim 15, further comprising a step of receiving signalling information indicating the selected motion coefficient quantizer.

Claims 21-32 (cancelled)

33.   (new) A method for decoding encoded video information, the encoded video information comprising quantized motion coefficients and quantized prediction error coefficients, said quantized motion coefficients representing the motion of a picture element with respect to a piece of reference video information and having a certain accuracy, said quantized prediction error coefficients representing a piece of prediction error video information, the method comprising:

-       determining a prediction error quantizer from the encoded video information, the prediction error quantizer using which the prediction error coefficients are quantized;

-       determining the accuracy of the motion coefficients using which the motion coefficients are quantized based on the prediction error quantizer;

-        performing inverse quantization of the quantized motion coefficients using the accuracy of the motion coefficients;

-        forming prediction video information for the picture element from the piece of reference video information, using the inverse quantized motion coefficients; and

-        performing inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer.

34.   (new)The method for decoding encoded video information according to claim 33, further comprising:

-        receiving signalling information indicating the selected motion coefficient quantizer.

35.   (new) A decoder for decoding encoded video information, the decoder comprises:

-        an input unit for receiving encoded video information from a video encoder, the encoded video information comprising quantized motion coefficients and quantized prediction error coefficients, said quantized motion coefficients representing the motion of a picture element with respect to a piece of reference video information and having a certain accuracy, said quantized prediction error coefficients representing a piece of prediction error video information, the input unit is configured to:

-        determine a prediction error quantizer from the encoded video information, the prediction error quantizer using which the prediction error coefficients are quantized;

-        determine the accuracy of the motion coefficients using which the motion coefficients are quantized based on the prediction error quantizer; and

-        a motion compensated predictor coupled to the input unit is configured to:

- perform inverse quantization of the quantized motion coefficients using the accuracy of the motion coefficients;

- form prediction video information for the picture element from the piece of reference video information, using the inverse quantized motion coefficients; and

- perform inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer.

36.   (new)The decoder for decoding encoded video information according to claim 35, wherein the input unit is futher configured to:

- determine signalling information indicating the selected motion coefficient quantizer from the received encoded video information.

37.   (new) A computer software program stored on a computer-readable medium, the software program causing the computer to perform a method for decoding encoded video information,

- receiving the encoded video information comprising quantized motion coefficients and quantized prediction error coefficients, said quantized motion coefficients representing the motion of a picture element with respect to a piece of reference video information and having a certain accuracy, said quantized prediction error coefficients representing a piece of prediction error video information, the method comprising:

- determining a prediction error quantizer from the encoded video information, the prediction error quantizer using which the prediction error coefficients are quantized;

- determining the accuracy of the motion coefficients using which the motion coefficients are quantized based on the prediction error quantizer;

-       performing inverse quantization of the quantized motion coefficients using the accuracy of the motion coefficients;

-       forming prediction video information for the picture element from the piece of reference video information, using the inverse quantized motion coefficients; and

-       performing inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer.

38.   (new)The computer software program according to claim 35, wherein the method further comprising:

-       receiving signalling information indicating the selected motion coefficient quantizer.

39.   (new) A receiver comprising a decoder for decoding encoded video information, wherein the decoder comprises:

- an input unit for receiving encoded video information from a video encoder, the encoded video information comprising quantized motion coefficients and quantized prediction error coefficients, said quantized motion coefficients representing the motion of a picture element with respect to a piece of reference video information and having a certain accuracy, said quantized prediction error coefficients representing a piece of prediction error video information, the input unit is configured to:

- determine a prediction error quantizer from the encoded video information, the prediction error quantizer using which the prediction error coefficients are quantized;

- determine the accuracy of the motion coefficients using which the motion coefficients are quantized based on the prediction error quantizer; and

- a motion compensated predictor coupled to the input unit is configured to:

- perform inverse quantization of the quantized motion coefficients using the accuracy of the motion coefficients;

- form prediction video information for the picture element from the piece of reference video information, using the inverse quantized motion coefficients; and

- perform inverse quantization of the quantized prediction error coefficients using an inverse quantizer corresponding to said prediction error quantizer.